

BIOCHEMICAL AND BIOPHYSICAL

Research Communications

EDITORS:

Paul D. Boyer

Frederick C. Neidhardt

I. C. Gunsalus

Elizabeth F. Neufeld

B. L. Horecker

W. D. Phillips

Boris Magasanik

Esmond E. Snell

Volume 73 • 1976



ACADEMIC PRESS

New York and London

A Subsidiary of Harcourt Brace Jovanovich, Publishers

Copyright © 1976 by Academic Press, Inc.

ALL RIGHTS RESERVED

No part of this publication may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

Made in the United States of America

Contents of Volume 73

Volume 73, Number 1, November 8, 1976

AUTHOR INDEX, Volume 73, Number 1, November 8, 1976	ii
BARBARA H. GIBBONS and I. R. GIBBONS. Functional Recombination of Dynein 1 with Demembrated Sea Urchin Sperm Partially Extracted with KCl	1
JOSEPH DONALD SMITH. Regulation of Transmethylation by an S-Adenosylmethionine Binding Protein	7
Z. GROMET-ELHANAN. Naphthylmercaptobenzoquinone, a New Inhibitor of Photophosphorylation in <i>Rhodospirillum rubrum</i> Chromatophores at the Level of Ubiquinone	13
YOSHINORI TANIGAWA, MAKOTO SHIMOYAMA, JUN TAI, KOUJI FUJII, and IWAO UEDA. Reciprocal Changes in Ca^{2+} /Protein Activator-Dependent and -Independent Cyclic AMP Phosphodiesterase during the Development of Chick Embryos	19
DANIEL M. MICHAELSON and MORDECHAI SOKOLOVSKY. Neurotransmitter Release from Viable Purely Cholinergic Torpedo Synaptosomes	25
R. C. DESROSIER, G. C. SEN, and P. LENGYEL. Difference in 5' Terminal Structure between the mRNA and the Double-Stranded Virion RNA of Reovirus	32
D. MARTIN WATTERSON and THOMAS C. VANAMAN. Affinity Chromatography Purification of a Cyclic Nucleotide Phosphodiesterase Using Immobilized Modulator Protein, a Troponin C-Like Protein from Brain	40
MARTINE TENCE and MICHEL DROSDOWSKY. Biosynthesis and Metabolism of Testosterone by Sertoli Cell-Enriched Seminiferous Tubules	47
AUBREY KNOWLES. The Effects of Chloride Ion upon Chicken Visual Pigments	56
M. S. ANWER, R. KROKER, and D. HEGNER. Effect of Albumin on Bile Acid Uptake by Isolated Rat Hepatocytes. Is There a Common Bile Acid Carrier?	63
JOHN M. WALKER, J. R. B. HASTINGS, E. W. JOHNS, and W. GAASTRA. The Partial Amino Acid Sequence of a Non-Histone Chromosomal Protein	72
HAROLD L. SEGAL, DAVID M. ROTHSTEIN, and JAMES R. WINKLER. A Correlation between Turn-over Rates and Lipophilic Affinities of Soluble Rat Liver Proteins	79
AHARON CIECHANOVER and AVRAM HERSHKO. Early Effects of Serum on Phospholipid Metabolism in Untransformed and Oncogenic Virus-Transformed Cultured Fibroblasts	85
JOHN E. MOLE, AJIT S. BHOWN, and J. CLAUDE BENNETT. Sequence Analysis of Human J Chain. Amino Terminal Location of a Disulfide Bond Linking the Immunoglobulin Heavy Chain	92
GOVIND S. RAO, JURGEN ECKEL, MARIE LUISE RAO, and HEINZ BREUER. Uptake of Thyroid Hormone by Isolated Rat Liver Cells	98
DAVID G. GORENSTEIN, DEBOJYOTI KAR, and ROBERT K. MOMIL. NMR Evidence against Covalent Attachment of an Aldehyde 'Transition-State' Analogue to α -Chymotrypsin	105
NUTAN T. PATEL and VIKTOR HOLOUBEK. Protein Composition of Liver Nuclear Ribonucleoprotein Particles of Rats Fed Carcinogenic Aminoazo Dyes	112
J. D. WILLIAMSON. The Effect of Methylglyoxal bis(Guanyldiazotone) on Vaccinia Virus Replication	120
MASAATSU UCHIDA. Active Extrusion of Calcium Ions by Smooth Muscle Microsomes	127
Y. ARATA, S. KIMURA, H. MATSUO, and K. NARITA. Proton Magnetic Resonance Studies of Ribonuclease T ₁ . Assignment of Histidine-40 Peak and Analysis of the Active Site	133
TAKEO ASAKAWA, ILENE SCHEINBAUM, and REN-JYE HO. Stimulation of Guanylate Cyclase Activity by Several Fatty Acids	141
L. K. GRILL, JAMES D. SUN, and JUDITH KANDEL. Effect of Double Stranded RNA on Protein Synthesis in an <i>in Vitro</i> Wheat Germ Embryo System	149
C. E. HILDEBRAND and R. A. WALTERS. Rapid Assembly of Newly Synthesized DNA into Chromatin Subunits prior to Joining of Small DNA Replication Intermediates	157
KENNETH V. HONN and WALTER CHAVIN. Prostaglandin Modulation of the Mechanism of ACTH Action in the Human Adrenal	164
D. L. CINTI and M. B. FEINSTEIN. Platelet Cytochrome P-450: A Possible Role in Arachidonate-Induced Aggregation	171
J. DANNER, H. M. LENHOFF, M. HOUSTON-COBB, W. HEAGY, and G. R. MARSHALL. γ -Glutamyl Transpeptidase in Hydra	180
T. VO-DINH, K. P. LI, and J. D. WINEFORDNER. Fluorescence Studies of Benzo-[a]-pyrene in Liposome Membrane Systems	187
M. DURR, Th. BOLLER, and A. WIEMKEN. Action of Proteinases on the Arginine Transport System of Purified Vacuoles from <i>Saccharomyces cerevisiae</i>	193

LUCY VAUGHAN and JOHN T. PENNISTON. Cation Control of Erythrocyte Membrane Shape: Ca^{++} Reversal of Discocyte to Echinocyte Transition Caused by Mg^{++} and Other Cations	200
--	-----

ERRATUM. Volume 72, Number 1, September 7, 1976. Angel de Blas and Henry R. Mahler. "Studies on Nicotinic Acetylcholine Receptors in Mammalian Brain. VI. Isolation of a Membrane Fraction Enriched in Receptor Function for Different Neurotransmitters," pp. 24-32	207
--	-----

Volume 73, Number 2, November 22, 1976

AUTHOR INDEX, Volume 73, Number 2, November 22, 1976	ii
P. HOSLI, R. P. ERICKSON, and E. VOGT. Prospects for Prenatal Diagnosis of Cystic Fibrosis: Induction of Biochemical Abnormalities in Fibroblasts from Patients with Cystic Fibrosis by a Urinary Glycoprotein	209
J. M. FERNANDEZ-SOUSA and A. M. MICHELSON. Variation of Superoxide Dismutases during the Development of the Fruit Fly <i>Ceratitis capitata</i> L.	217
BARBARA RAMSAY SHAW and KENNETH S. SCHMITZ. Quasielastic Light Scattering by Biopolymers. Conformation of Chromatin Multimers	224
C. N. CHANG, MICHAEL SCHWARTZ, and F. N. CHANG. Identification and Characterization of a New Methylated Amino Acid in Ribosomal Protein L33 of <i>Escherichia coli</i>	233
RUTH G. ALSCHER, SUSAN P. HAWKES, and KENNETH SAUER. The Association of Protein Synthesis with Protochlorophyllide Holochrome Regeneration in Dark-Grown Barley Leaves	240
PAUL REY and HARDEN M. MCCONNELL. Binding of Antibodies to Nitroxide Spin Labels and to the Corresponding Hydroxylamines	248
UZI REISS and DAVID GERSHON. Comparison of Cytoplasmic Superoxide Dismutase in Liver, Heart and Brain of Aging Rats and Mice	255
ANDRE F. KLIER and MARGUERITE-M. LECADET. Arguments Based on Hybridization-Competition Experiments in Favor of the <i>in Vitro</i> Synthesis of Sporulation-Specific mRNAs by the RNA Polymerase of <i>B. thuringiensis</i>	263
KARL MIERZEJEWSKI and ENRIQUE ROZENGURT. Stimulation of DNA Synthesis and Cell Division in a Chemically Defined Medium: Effect of Epidermal Growth Factor, Insulin and Vitamin B_{12} on Resting Cultures of 3T6 Cells	271
NORBERTO A. GUZMAN, RICHARD A. BERG, and DARWIN J. PROCKOP. Concanavalin A Binds to Purified Prolyl Hydroxylase and Partially Inhibits Its Enzymic Activity	279
M. WLODARCZYK and B. C. KLINE. Association of R6K Plasmid Replicative Intermediates with the Folded Chromosome of <i>Escherichia coli</i>	286
MUTSUO SEKIGUCHI, HIROSHI HAYAKAWA, FUMIKO MAKINO, KIYOJI TANAKA, and YOSHIO OKADA. A Human Enzyme That Liberates Uracil from DNA	293
J. H. LIPTON and W. C. McMURRAY. Phosphatidyl Glycerol Phosphate Phosphatase in BHK-21 Cells. A Comparison with Rat Liver Mitochondria	300
SUBAL BISHAYEE and UMADAS MAITRA. Specificity of Cleavage by Ribonuclease III	306
GEOFFREY R. KITCHINGMAN and MAURILLE J. FOURNIER. <i>In Vivo</i> Maturation of an Undermodified <i>Escherichia coli</i> Leucine Transfer RNA	314
ALAN DAFFORN, PAUL KERR, and ROBERT R. MURRAY. A Ketopentyl Transition State Analog for Acetylcholinesterase	323
LEROY M. NYBERG, A.-LI HU, RUEY M. LOOR, and TUNG Y. WANG. Androgen-Induced Gene Activation in the Rat Prostate	330
D. SARANTAKIS, J. TEICHMAN, E. L. LIEN, and R. L. FENICHEL. A Novel Cyclic Undecapeptide, WY-40,770, with Prolonged Growth Hormone Release Inhibiting Activity	336
KENNETH W. RENTON and GILBERT J. MANNERING. Depression of Hepatic Cytochrome P-450-Dependent Monooxygenase Systems with Administered Interferon Inducing Agents	343
JANE B. LIAN, MARTHA SKINNER, MELVIN J. GLIMCHER, and PAUL GALLOP. The Presence of γ -Carboxyglutamic Acid in the Proteins Associated with Ectopic Calcification	349
H. TAGUCHI and S. Y. WANG. Preparation and Stereoconfigurations of Heterodimers of Pyrimidines	356
WILLIAM ROUSLIN. Catabolite Repression of the Formation of Precursors of Electron Transfer Complexes III and IV in Adapting Bakers' Yeast: Dependence upon a Mitochondrially Translated Repressor	364
GEORGE LEE, SALVATORE M. ALOJ, ROSCOE O. BRADY, and LEONARD D. KOHN. The Structure and Function of Glycoprotein Hormone Receptors: Ganglioside Interactions with Human Chorionic Gonadotropin	370
H. KOLBE, K. KELLER, K. LANGE, and H. HERKEN. Metabolic Consequences of Drug-Induced Inhibition of the Pentose Phosphate Pathway in Neuroblastoma and Glioma Cells	378
B. BHATTACHARYYA and J. WOLFF. Stabilization of Microtubules by Lithium Ion	383
CECIL S. JOHNSON, LORI VOGTMANN, and WILLIAM C. DEAL, JR. Viscometric Comparison of the Asymmetry Properties of Phosphofructokinases from Pig Kidney and Rabbit Muscle	391

PAUL P. C. LIN and JOE L. KEY. Lysine-Rich Histone H1 Kinase from Soybean Hypocotyl	396
EBO BOS, WILLEM ROSKAM, and DIETER GALLWITZ. Partial Purification and Characterization of Individual Histone Messenger RNAs from HeLa Cells	404
N. P. A. HUNER and F. D. H. MACDOWALL. Effect of Cold Adaptation of Puma Rye on Properties of RUDP Carboxylase	411
JAMES A. FERRENDELLI and ADOLPH I. COHEN. The Effects of Light and Dark Adaptation on the Levels of Cyclic Nucleotides in Retinas of Mice Heterozygous for a Gene for Photoreceptor Dystrophy	421
ROSALIE CROUCH and MICHAEL COFFMAN. The Effect of Visible Light on the Regeneration of Rhodopsin	428
LELAND K. RUSSELL, SCOTT A. KIRKLEY, THOMAS R. KLEYMAN, and SAMUEL H. P. CHAN. Isolation and Properties of OSCP and an F ₁ -ATPase Binding Protein from Rat Liver Mitochondria—Evidence against OSCP as the Linking "Stalk" between F ₁ and the Membrane	434
JAMES D. SIMON, WILLIAM E. HOUCK, and MAURICE M. ALBALA. Release of Unsaturated Vitamin B ₁₂ Binding Capacity from Human Granulocytes by the Calcium Ionophore A23187	444
JEAN DAYAN and CHARLES R. DAWSON. Substrate Specificity of Ascorbate Oxidase	451
PATRICK D. MOORE and MASATO KOREEDA. Application of the Change in Partition Coefficient with pH to the Structure Determination of Alkyl Substituted Guanosines	459
JAMES N. LOWE, LLOYD L. INGRAHAM, JONATHAN ALSPACH, and RICHARD RASMUSSEN. A Proposed Symmetry Forbidden Oxidation Mechanism for the Bacterial Luciferase Catalyzed Reaction	465
MELODIE M. BUXMAN, GRETCHEN E. BUEHNER, and KIRK D. WUEPPER. Isolation of Substrates of Epidermal Transglutaminase from Bovine Epidermis	470
BETSY L. RICE and ROBERT W. STACH. The Dimer-Monomer Equilibrium Constant for [125I]β Nerve Growth Factor	479
JANE E. BOTTENSTEIN and JEAN de VELLIS. Divalent Cation Ionophore A23187: A Potent Protein Synthesis Inhibitor	486
O. FARVER, M. GOLDBERG, D. LANCET, and I. PECHT. Oxidative Titrations of <i>Rhus vernicifera</i> Laccase and Its Specific Interaction with Hydrogen Peroxide	494
MARION C. THURNAUER and JAMES R. NORRIS. Magnetophotoselection Applied to the Triplet State Observed by EPR in Photosynthetic Bacteria	501
J. F. McKELVY, P. LeBLANC, C. LAUDES, S. PERRIE, Y. GRIMM-JORGENSEN, and C. KORDON. The Use of Bacitracin as an Inhibitor of the Degradation of Thyrotropin Releasing Factor and Luteinizing Hormone Releasing Factor	507
WILLIAM R. SCOWCROFT, ALAN H. GIBSON, and JANET D. PAGAN. Nitrogen Fixation in Cultured Cowpea Rhizobia : Inhibition and Regulation of Nitrogenase Activity	516
FRASER J. BERGERSEN and GRAHAM L. TURNER. The Role of O ₂ -Limitation in Control of Nitrogenase in Continuous Cultures of <i>Rhizobium</i> sp.	524
HERBERT A. THOMPSON, ISAAC SADNIK, and KIVIE MOLDAVE. A Novel Method for the Rapid Quantitative Determination of Ribosome Dissociation Factor (IF-3) Activity. An Assay Based on the Coupling of the Dissociation and Peptidyltransferase Reactions	532

Volume 73, Number 3, December 6, 1976

AUTHOR INDEX, Volume 73, Number 3, December 6, 1976	ii
L. I. SLOBIN. The Inhibition of Elongation Factor 1 Activity by Heparin	539
CHANTAL CREMISI, PIER FRANCO PIGNATTI, and MOSHE YANIV. Random Location and Absence of Movement of the Nucleosomes on SV 40 Nucleoprotein Complex Isolated from Infected Cells	548
J. RYDSTROM, J.-A. GUSTAFSSON, M. INGELMAN-SUNDBERG, J. MONTELIUS, and L. ERNSTER. The Topology of the Mitochondrial 11β-Hydroxylase System in Bovine Adrenal Cortex	555
J. E. B. FOX and B. L. HILLCOAT. Inactivation of Dihydrofolate Reductase <i>in Vitro</i> by Binding to Microsomal Membranes	562
UDO KLEIN and KURT von FIGURA. Partial Purification and Characterization of a Heparan Sulfate Specific Endoglucuronidase	569
DANIEL RICQUIER and JEAN-CLAUDE KADER. Mitochondrial Protein Alteration in Active Brown Fat: A Sodium Dodecyl Sulfate-Polyacrylamide Gel Electrophoretic Study	577
KENJI SANO and HIROO MAENO. Stimulation by ATP of [³ H]Dopamine Binding to Synaptic Membrane Fractions of Canine Caudate Nucleus	584
J. P. RIOU, T. H. CLAUS, and S. J. PILKIS. Control of Pyruvate Kinase Activity by Glucagon in Isolated Hepatocytes	591
RONALD E. LAW, RALPH M. SINIBALDI, MICHAEL R. CUMMINGS, and ADOLPH J. FERRO. Inhibition of RNA Synthesis in Salivary Glands of <i>Drosophila melanogaster</i> by 5'-Methylthioadenosine	600

M. SCHIMERLIK and M. A. RAFTERY. A Fluorescence Probe of Acetylcholine Receptor Conformation and Local Anesthetic Binding	607
MARION H. O'LEARY. Carbon Isotope Effect on the Enzymatic Decarboxylation of Pyruvic Acid	614
JUNE K. DUNNICK, ROBERT F. KALLMAN, and JOSEPH P. KRISS. Lipid Vesicle Interaction with EMT-6 Tumor Cells and Effect on Subsequent Cell Growth	619
PAIROH PINPHANICHAKARN, GISELA KRAMER, and BOYD HARDESTY. Partial Reaction of Peptide Initiation Inhibited by the Reticulocyte Hemin-Controlled Repressor	625
D. H. COY, A. J. KASTIN, A. V. SCHALLY, O. MORIN, N. G. CARON, F. LABRIE, J. M. WALKER, R. FERTEL, G. G. BERNSTON, and C. A. SANDMAN. Synthesis and Opioid Activities of Stereoisomers and Other D-Amino Acid Analogs of Methionine-Enkephalin	632
MICHAEL R. WATERMAN and G. LARRY COTTAM. Kinetics of the Polymerization of Hemoglobin S: Studies below Normal Erythrocyte Hemoglobin Concentration	639
MARGERY C. BEINFELD and PAUL M. PACKMAN. Estrogen Induction of Specific Soluble Proteins in the Hypothalamus of the Immature Rat	646
LLOYD A. MAY, H. C. CHEUNG, J. L. AULL, and J. D. GLICKSON. Fluorescence Study of Guanidine Hydrochloride Denaturation of Thymidylate Synthetase	653
JEAN A. HAMILTON, M. N. SABESAN, L. K. STEINRAUF, and A. GEDDES. The Crystal Structure of a Complex of Cycloheptaamylose with 2,5-Diiodobenzoic Acid	659
JACK R. LICHTENSTEIN, EUGENE A. BAUER, and JOUNI UITTO. Cleavage of Human Fibroblast Type I Procollagen by Mammalian Collagenase: Demonstration of Amino- and Carboxy-Terminal Extension Peptides	665
JUI H. WANG and MAN-CHIU YANG. Generation of ATP by Chloroplasts through Solvent Perturbation	673
WILLIAM S. COHEN and RICHARD E. McCARTY. Reversibility of the Cyanide Inhibition of Electron Transport in Spinach Chloroplast Thylakoids	679
VIDA VAMBUSAS and WALTER BERTSCH. Does AMP Participate in Photosynthetic Phosphorylation?	686
CRAIG V. BYUS, JAMES M. CHUBB, RYAN J. HUXTABLE, and DIANE H. RUSSELL. Increase in Type I Adenosine 3',5'-Monophosphate-Dependent Protein Kinase during Isoproterenol-Induced Cardiac Hypertrophy	694
Y. S. REDDY and LEIGH E. WYBORN. Phosphorylation of Guinea Pig Cardiac Natural Actomyosin and Its Effect on ATPase Activity	703
VIRGINIA HIEBER, JACK DISTLER, RACHEL MYEROWITZ, ROY D. SCHMICKEL, and GEORGE W. JOURDIAN. The Role of Glycosidically Bound Mannose in the Assimilation of β -Galactosidase by Generalized Gangliosidosis Fibroblasts	710
ALAN J. KINNIBURGH and TERENCE E. MARTIN. Oligo(A) and Oligo(A)-Adjacent Sequences Present in Nuclear Ribonucleoprotein Complexes and mRNA	718
DAVID LAGUNOFF. The Reaction of Cytochalasin A with Sulfhydryl Groups	727
HENRY G. WILCOX, G. DEWEY DUNN, and MURRAY HEIMBERG. Effects of a Mixture of a Saturated with an Unsaturated Fatty Acid on Secretion of the Very Low Density Lipoprotein by the Liver	733
KEIKO SAKAKIBARA, MITSUO TORII, BLESILA P. ALBERTO, and AKIRA MISAKI. Immunochemical Studies on Dextran: Distribution of $\alpha 1 \rightarrow 2$ and $\alpha 1 \rightarrow 6$ Specific Determinants of Dextran NRRL B1397	741
RAYMOND L. HOUGHTON, ROBERT J. FISHER, and D. RAO SANADI. Dependence of <i>Escherichia coli</i> Pyridine Nucleotide Transhydrogenase on Phospholipids and Its Sensitivity to <i>N</i> -Ethylmaleimide	751
B. E. CHAPMAN and W. J. MOORE. Conformation of Myelin Basic Protein in Aqueous Solution from Nuclear Magnetic Resonance Spectroscopy	758
M. K. AGARWAL. Evidence that Natural vs Synthetic Steroid Hormones Bind to Physicochemically Distinct Cellular Receptors	767
ANNIE PIFFETEAU, MICHEL GAUDRY, and ANDREE MARQUET. Biological Properties of Selenobiotin	773
E. R. VIMR and J. R. CARTER, Jr. Peptide Heterogeneity in the Band 3 Protein of Rabbit Erythrocyte Plasma Membranes	779
JEFFREY L. CLARK and JOYCE L. FULLER. Protein Inhibitor of Ornithine Decarboxylase Does Not Account for Effect of Putreschine on 3T3 Cells	785
TATSUO TOMITA and MASASHI KOBAYASHI. Differential Effect of Alpha- and Beta-D-Glucose on Protection against Alloxan Toxicity in Isolated Islets	791
D. L. STORY, J. A. O'DONNELL, F. M. DONG, and R. A. FREEDLAND. Gluconeogenesis in Isolated Hepatocytes from Fed and Forty-Eight-Hour Starved Rats	799
TOSHIO TOMITA, SHINTARO IWASHITA, and SHIRO KANEGASAKI. Role of Cell Surface Mobility on Bacteriophage Infection: Translocation of <i>Salmonella</i> Phages to Membrane Adhesions	807
EDWARD A. SAUSVILLE, JACK PEISACH, and SUSAN B. HORWITZ. A Role for Ferrous Ion and Oxygen in the Degradation of DNA by Bleomycin	814
D. BRDICZKA and D. SCHUMACHER. Iodination of Peripheral Mitochondrial Membrane Proteins in Correlation to the Functional State of the ADP/ATP Carrier	823

JOHN C. SALERNO, TOMOKO OHNISHI, JOYCE LIM, and TSOO E. KING. Tetranuclear and Binuclear Iron-Sulfur Clusters in Succinate Dehydrogenase: A Method of Iron Quantitation by Formation of Paramagnetic Complexes	833
ERRATA. Volume 71, Number 4, August 23, 1976. Jack B. Robinson, Jr., Donald E. Mahan, and Roger E. Koeppe. "Studies on Rat Brain Acyl-Coenzyme A Hydrolase (Short Chain)," pp. 959-965	841
Volume 71, Number 4, August 23, 1976. Samuel W. Luborsky, Chungming Chang, Samuel J. Pancake, and Peter T. Mora. "Detergent Solubilized and Molecular Weight Estimation of Tumor-Specific Surface Antigen from SV40 Virus Transformed Cells," pp. 990-996	841
Volume 72, Number 3, October 4, 1976. J. J. G. Moura, A. V. Xavier, M. Bruschi, J. Le Gal, D. O. Hall, and R. Cammack. "A Molybdenum-Containing Iron-Sulphur Protein from <i>Desulphovibrio gigas</i> ," pp. 782-789	842

Volume 73, Number 4, December 20, 1976

AUTHOR INDEX, Volume 73, Number 4, December 20, 1976	ii
PAUL H. NAYLOR, HERBERT SHEPPARD, GARY B. THURMAN, and ALLAN L. GOLDSTEIN. Increase of Cyclic GMP Induced in Murine Thymocytes by Thymosin Fraction 5	843
DAVID G. WOLFF and WAYNE R. BIDLACK. The Formation of Carbon Monoxide during Peroxidation of Microsomal Lipids	850
PAUL T. KELLY and CARL W. COTMAN. Intermolecular Disulfide Bonds at Central Nervous System Synaptic Junctions	858
STEPHEN C. HARVEY and HERBERT C. CHEUNG. Fluorescence Studies of 1,N ⁶ -Ethenoadenosine Triphosphate Bound to G-Actin: The Nucleotide Base Is Inaccessible to Water	865
N. HORIUCHI, T. SUDA, S. SASAKI, H. TAKAHASHI, E. SHIMAZAWA, and E. OGATA. Absence of Regulatory Effects of 1 α ,25-Dihydroxyvitamin D ₃ on 25-Hydroxyvitamin D ₃ Metabolism in Rats Constantly Infused with Parathyroid Hormone	869
THOMAS A. GROOMS and JAMES D. OGLE. Evidence for Mutual Exclusion in the Tryptic Hydrolysis of Two Peptide Bonds in Maleylated Trypsinogen	876
J. P. STEIN, Jr., and K. E. BLOCH. Inhibition of <i>E. coli</i> β -Hydroxydecanoyl Thioester Dehydrase by ppGpp	881
EDWARD A. NEUWELT, WILLIAM A. GAHL, and CARL C. LEVY. Immunological Studies on the Interaction of Polyadenylic Acid and Human Liver Ribonuclease	885
O. BARZU, L. KISS, O. BOJAN, G. NIAC, and H. H. MANTSCH. Participation of eADP and eATP in the Reactions of Oxidative Phosphorylation in Rat Liver Mitochondria	894
Y. K. HO, M. P. KUNG, and T. J. BARDOS. Oligonucleotides Containing Modified Bases. 1. Inhibition of DNA and RNA Polymerases by Partially Thiolated Oligocytidylic Acids	903
V. M. GARSKY, D. E. CLARK, and N. H. GRANT. Synthesis of a Nonreducible Cyclic Analog of Somatostatin Having Only Growth Hormone Release Inhibiting Activity	911
FREDERICK CHU, DAVID L. MILLER, TANYA SCHULZ, HERBERT WEISSBACH, and NATHAN BROTH. DNA-Directed <i>In Vitro</i> Synthesis of Elongation Factor Tu	917
SONIA BAUR and VIRGINIA C. BACON. A Specific Gastrin Receptor on Plasma Membranes of Antral Smooth Muscle	928
BARBARA PETRACK, ANDREW J. CZERNIK, WILLIAM ITTERLY, JUSTIN ANSELL, and HERBERT CHERTOCK. Diazepam: <i>In Vitro</i> Effects on Glucagon and Insulin Release	934
O. MORIN, M. G. CARON, A. De LEAN, and F. LABRIE. Binding of the Opiate-Like Pentapeptide Methionine-Enkephalin to a Particulate Fraction from Rat Brain	940
KIYOSHI TATSUMI, SHIGEYUKI KITAMURA, NOBUYUKI KOGA, HIDETOSHI YOSHIMURA, and YASUHIKO KATO. <i>Cis-Trans</i> Isomerization of Nitrofuran Derivatives by Xanthine Oxidase	947
JEFFREY W. MORSE and MURRAY P. DEUTSCHER. A Physiological Role for tRNA Nucleotidyltransferase during Bacteriophage Infection	953
GRAHAM J. WISHART and G. J. DUTTON. Precocious Development of UDP-Glucuronyltransferase Activity in Cultured Fetal Rat Liver Brought about by Glucocorticoids and Requiring Amino Acid Incorporation into Protein	960
ZOLTAN A. TOKES and NINO SORGENTE. Cell Surface-Associated and Released Proteolytic Activities of Bovine Aorta Endothelial Cells	965
ABRAHAM ROSENBERG. Light-Independent Stoichiometry of Galactosyl Diglyceride and Chlorophyll Accretion during Light-Induced Chloroplast Membrane Synthesis in <i>Euglena</i>	972
C. L. BORDERS, Jr., and BRETT A. WILSON. Phosphoglycerate Mutase Has Essential Arginyl Residues	978
M. I. BALDI, P. BAZZICALUPO, and G. P. TOCCHINI-VALENTINI. Particulate DNA Polymerase from the Cytoplasm of <i>Xenopus laevis</i> Oocytes	985
SUMIO IWAI, YOKO TANABE, and NOBUMARO KAWASHIMA. Origin of Sequence Heterogeneity of the Small Subunit of Fraction 1 Protein from <i>Nicotiana tabacum</i>	993

FRANCOISE PELLEFIGUE, JEAN DeBROHUN BUTLER, STEPHEN P. SPIELBERG, MORLEY D. HOLLENBERG, STEPHEN I. GOODMAN, and JOSEPH D. SCHULMAN. Normal Amino Acid Uptake by Cultured Human Fibroblasts Does Not Require Gamma-Glutamyl Transpeptidase	997
GERALD GOLD, KAREN KAROLY, COLETTE FREEMAN, and RICHARD C. ADELMAN. A Possible Role for Insulin in the Altered Capability for Hepatic Enzyme Adaptation during Aging	1003
ZELDA B. ROSE. A Procedure for Decreasing the Level of 2,3-Bisphosphoglycerate in Red Cells <i>in Vitro</i> ..	1011
R. U. MARGOLIS, K. LALLEY, W.-L. KIANG, C. CROCKETT, and R. K. MARGOLIS. Isolation and Properties of a Soluble Chondroitin Sulfate Proteoglycan from Brain	1018
H. R. GLATT, M. METZLER, H.-G. NEUMANN, and F. OESCH. Metabolic Epoxidation of <i>trans</i> -4-Acetylaminostilbene: A Protective Mechanism against Its Activation to a Mutagen	1025
YVES GOUSSAULT, ABBAS SHARIF, and ROLAND BOURRILLON. Serum Albumin Biosynthesis and Secretion by Resting and Lectin Stimulated Human Lymphocytes	1030
N. KAUFMAN, M. NEWKIRK, and J. C. WYLLIE. Effect of Iron Absorption on Plasma Membrane Proteins of Small Intestinal Mucosal Cells from Iron-Deficient Rats	1036
STEPHEN P. BIDEY, PHILIP MARSDEN, HEDLEY BERRY, JOHN ANDERSON, and COLIN MCKERRON. A Comparison of Thyrotropin- and Dibutyl Cyclic AMP-Induced Thyroglobulin Iodination in Cultured Human Thyroid Cells	1042
DAVID W. L. HUKINS, JOHN WOODHEAD-GALLOWAY, and DAVID P. KNIGHT. Molecular Tilting in Dried Elastoidin and Its Implications for the Structures of Other Collagen Fibrils	1049
CLINTON O. CHICHESTER III, GEORGE C. FULLER, and GEORGE J. CARDINALE. <i>In Vivo</i> Labeling and Turnover of Prolyl Hydroxylase and a Related Immunoreactive Protein	1056
EMANUEL J. DILIBERTO, Jr., JULIUS AXELROD, and IRWIN M. CHAIKEN. The Effects of Ligands on Enzymic Carboxyl-Methylation of Neurophysins	1063
BARRY H. GINSBERG, C. RONALD KAHN, JESSE ROTH, and PIERRE De MEYTS. Insulin-Induced Dissociation of Its Receptor into Subunits: Possible Molecular Concomitant of Negative Cooperativity ..	1068
L. W. LU, G. H. CHIANG, W.-C. TSENG, and K. RANDERATH. Effects of 5-Fluorouridine on Modified Nucleosides in Mouse Liver Transfer RNA	1075
WILLY MIN JOU, MARC VAN MONTAGU, and WALTER FIERIS. On the Possible Modulating Role of the Isoleucine AUA-Codon in Bacteriophage MS2 RNA	1083
LAWRENCE B. LACHMAN and ROBERT E. HANDSCHUMACHER. The Active Site of L-Asparaginase: Dimethylsulfoxide Effect of 5-Diazo-4-Oxo-L-Norvaline Interactions	1094
SHYAMAL K. MAITRA and CLINTON E. BALLOU. Characterization of a Mannan-Like Oligosaccharide from <i>Mycobacterium smegmatis</i>	1101
ROBERT G. INGALLS, JAMES C. BARTHOLOMEW, and EDWARD L. BENNETT. Poly rC-Oligo dG Specific Template Activity of Mouse Viral DNA Polymerase Detected by Isoelectric Focusing	1109
T. M. MONAHAN, A. F. FROST, and C. W. ABELL. Stimulation of Human Peripheral Blood Lymphocytes by a Sodium Periodate (NaIO ₄) Induced Growth Factor	1115
CATHERINE L. COYLE and HARRY B. GRAY. Kinetic Studies of the Reduction of <i>Pseudomonas aeruginosa</i> Ferricytochrome c ₅₅₁ by Fe(EDTA) ²⁻	1122
AUTHOR INDEXES, Volumes 68 - 73, 1976	1128

Information for Contributors

BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS is devoted to the rapid dissemination of timely and significant observations in the diverse fields of modern experimental biology. Manuscripts submitted should be so written as to clearly emphasize the novel aspects of the information reported, with the understanding that the same material has not been, nor will be, submitted for publication elsewhere.

Manuscripts in duplicate may be sent to any one of the editors whose names and addresses are listed on the inside front cover.

To ensure rapid and accurate publication, it is essential that manuscripts conform to the instructions which follow. Manuscripts which are not in accordance with these specifications may be returned.

Preparation of Manuscripts

Article length should not exceed 5 typewritten pages, double-spaced on 8.5 X 11 in. high quality paper (the complete manuscript, including space occupied by figures and tables, should not exceed 8 pages).

Summary. Each article must be preceded by a brief summary, typed single-spaced, not exceeding 10 lines (approximately 100-150 words). This paragraph should adequately summarize the pertinent findings of the paper.

Typing. Articles are reproduced directly from the submitted manuscript as camera-ready copy. Manuscripts must therefore be typewritten on good quality white bond paper. A black silk or carbon typewriter ribbon should be used. Special care should be taken to ensure a sharp clean impression of letters throughout. Use of an electric typewriter is strongly recommended. Erasures should be avoided. Care must also be taken to avoid errors in spelling, word division and punctuation. **No changes may be made in manuscripts after acceptance.**

Manuscripts should be double-spaced on one side of the sheet; **methods, references, footnotes and figure legends should be single-spaced.** Typing area of the page must be as close as possible to 6.5 in. wide and 9.5 in. long.

Symbols and Abbreviations defined in the IUPAC-IUB Document No. 1 (*Arch. Biochem. Biophys.* (1966) 115, 1-12) may be used without definition. Use of all other abbreviations and symbols is to be avoided. When abbreviations are essential, they should be consistent with the form and style of the above document and **must be defined in a footnote, rather than in the text.** Such abbreviations **must not** be used in the Summary.

Enzyme names should not be abbreviated except when the substrate has an approved abbreviation (e.g., ATPase). Use the Enzyme Commission ("EC") code number when available.

Isotopes should be styled following the recommendations of the IUB Commission of Editors of Biochemical Journals. The symbol of the isotope introduced should be placed in square brackets directly attached to the front of the name (e.g., [³²P]CMP). Note that the isotope number should only be used as a (superior) prefix to the atomic symbol, not to an abbreviation.

For further information regarding nomenclature authors are advised to consult the Instructions to Authors of the *Archives of Biochemistry and Biophysics* (1974) 160, iii-xii. Reprints are available from the Publisher.

Footnotes should be typed single-spaced at the foot of the page on which they are mentioned in the text. References and figure legends should be typed single-spaced on separate pages.

Illustrations and Tables. Do not attempt to insert figures, figure legends or tables into the text. This will be done by the Publisher.

All drawings should be clearly labeled in black ink in a manner suitable for direct reproduction (Leroy lettering size 120 or 140). Do not use press-on lettering; typewritten lettering is not acceptable.

Figures will be reduced to fit within the type area of the page (approximately 5 X 8 in.); the original drawings should be no larger than 8.5 X 11 in.

Glossy photographs of drawings are acceptable provided they are sharp, clear prints with an even *black* density.

Mathematical or chemical symbols that cannot be typed should be inked in carefully in black. Structural formulas should be drawn in black ink.

Illustrations and tables should be submitted on separate sheets.

Page Numbers and Headings. Page numbers should be typed at the top of the page.

The title of the paper should be typed in capital letters near the top of the first page, with the name(s) and affiliation(s) of the author(s) typed just below. Headings within the article should be arranged according to their relative importance.

References to the literature should be cited by the number in parentheses in the text and listed in numerical order in a single-spaced typed list placed at the end of the manuscript. Abbreviations of journals should conform to those of *Chemical Abstracts Service Source Index*, 1969. Note the following examples.

For a journal article:

1. Chatteraj, D. K., and Bull, H. B. (1971) *Arch. Biochem. Biophys.* 142, 363-370.

For a book by one or more authors:

2. Robinson, G. A., Sutherland, E. W., and Butcher, E. (1971) *Cyclic AMP*, pp. 298-302, Academic Press, New York.

Note that inclusive pagination must be given.

Acknowledgment of Receipt. Authors desiring acknowledgment of receipt of manuscript should enclose a stamped self-addressed card.

Reprints. Reprint order forms, with price lists, are sent to the authors immediately upon acceptance of their manuscript.

